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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/710,922	08/12/2004	John Li	81098520 / FCHM 0158 PUS	4921
28395	7590	12/15/2005	EXAMINER	
BROOKS KUSHMAN P.C./FGTL 1000 TOWN CENTER 22ND FLOOR SOUTHFIELD, MI 48075-1238			TRAN, BINH Q	
			ART UNIT	PAPER NUMBER
			3748	

DATE MAILED: 12/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)	
	10/710,922	LI ET AL.	
	Examiner	Art Unit	
	BINH Q. TRAN	3748	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |  |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>08/04, 10/05, 08/04</u> | 6) <input type="checkbox"/> Other: ____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

*Claims 1-21 are rejected under 35 U.S.C. 102 (b) as being anticipated by Chen (Patent Number 6,777,370).*

Regarding claims 1, 13, and 21, Chen discloses a method and apparatus of removing harmful gases from an auto-mobile exhaust containing NO<sub>x</sub>, CO, and hydrocarbons the method comprising: contacting a NO<sub>x</sub> trap composition with a first exhaust gas mixture at a temperature

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of at least 200°C, the first exhaust gas mixture comprising exhaust gases from an internal combustion engine operating in a fuel-lean condition and the NOx trap composition comprising: a precious metal; a NOx absorber material (e.g. See col. 8, lines 55-67; col. 9, lines 1-23; col. 15, lines 61-67; col. 16, lines 1-11); an oxide that inhibits the decrease in NOx storing ability of the NOx trap composition; and a support material; and contacting the NOx trap composition with a second exhaust gas composition at a temperature of at least 200°C, the second exhaust gas mixture comprising exhaust gases from an internal combustion engine operating in a fuel-rich condition (e.g. See Fig. 2; col. 10, lines 31-64; cols. 16-18, lines 1-67).

Regarding claim 2, Chen further discloses that the oxide that inhibits the decrease in NOx storing ability of the NOx trap composition is selected from the group consisting of oxides of magnesium, oxides of manganese, and combinations thereof (e.g. See col. 34, lines 44-67; cols. 35-37, lines 1-67).

Regarding claims 3, 17, Chen further discloses that the oxide that inhibits the decrease in NOx storing ability of the NOx trap composition is present in an amount from about 1 to 30% of the total weight of the NOx trap washcoat (e.g. See col. 34, lines 44-67; cols. 35-37, lines 1-67).

Regarding claim 4, Chen further discloses that the oxide that inhibits the decrease in NOx storing ability of the NOx trap composition is present in an amount from about 5 to 20% of the total weight of the NOx trap washcoat (e.g. See col. 34, lines 44-67; cols. 35-37, lines 1-67).

Regarding claim 5, Chen further discloses that the oxide that inhibits the decrease in NOx storing ability of the NOx trap composition is present in an amount from about 5 to 15% of the total weight of the NOx trap washcoat (e.g. See col. 34, lines 44-67; cols. 35-37, lines 1-67).

Regarding claims 6, 14, Chen further discloses that the NOx absorber is selected from the group consisting of oxides of alkali metals, oxides of alkaline earth metals, oxides of rare earth metals, and combinations thereof (e.g. See col. 34, lines 44-67; cols. 35-37, lines 1-67).

Regarding claims 7, 15, Chen further discloses that the NOx absorber is selected from the group consisting of cesium oxide, praseodymium oxide, strontium oxide, barium oxide, and combinations thereof (e.g. See col. 34, lines 44-67; cols. 35-37, lines 1-67).

Regarding claims 8, 16, Chen further discloses that the precious metal is a metal selected from the group consisting of platinum, palladium, rhodium, and combinations thereof (e.g. See col. 34, lines 44-67; cols. 35-37, lines 1-67).

Regarding claims 9, 18, Chen further discloses that the NOx trap composition is applied to a substrate (e.g. See col. 34, lines 44-67; cols. 35-37, lines 1-67).

Regarding claims 10, 19, Chen further discloses that the substrate is cordierite (e.g. See col. 34, lines 44-67; cols. 35-37, lines 1-67).

Regarding claims 11, Chen further discloses that the NOx trap composition is applied to the substrate by washcoating (e.g. See col. 34, lines 44-67; cols. 35-37, lines 1-67).

**Regarding claims 12 and 20, Chen further discloses that the vehicle exhaust system implementing the method of claims 1 and 13** (e.g. See col. 8, lines 55-67; col. 9, lines 1-23; col. 15, lines 61-67; col. 16, lines 1-11). ***It is examiner official notice is taken that the claim is a Product-by Process claim. “Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process***

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*claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process”.*

***Claims 1-21 are rejected under 35 U.S.C. 102 (b) as being anticipated by Pott (Patent Number 5,922,142).***

Regarding claims 1, 13, and 21, Pott discloses a method and apparatus of removing harmful gases from an auto-mobile exhaust containing NO<sub>x</sub>, CO, and hydrocarbons the method comprising: contacting a NO<sub>x</sub> trap (7) composition with a first exhaust gas mixture at a temperature of at least 200°C, the first exhaust gas mixture comprising exhaust gases from an internal combustion engine operating in a fuel-lean condition and the NO<sub>x</sub> trap composition comprising: a precious metal; a NO<sub>x</sub> absorber material (e.g. See col. 4, lines 53-67; col. 5, lines 1-3); an oxide that inhibits the decrease in NO<sub>x</sub> storing ability of the NO<sub>x</sub> trap composition; and a support material; and contacting the NO<sub>x</sub> trap composition with a second exhaust gas composition at a temperature of at least 200°C, the second exhaust gas mixture comprising exhaust gases from an internal combustion engine operating in a fuel-rich condition (e.g. See col. 4, lines 53-67; col. 5, lines 1-3; col. 7, lines 1-65).

Regarding claim 2, Pott further discloses that the oxide that inhibits the decrease in NO<sub>x</sub> storing ability of the NO<sub>x</sub> trap composition is selected from the group consisting of oxides of magnesium, oxides of manganese, and combinations thereof (e.g. See col. 12, lines 65-67; col. 13, lines 1-55).

Regarding claims 3, 17, Pott further discloses that the oxide that inhibits the decrease in NO<sub>x</sub> storing ability of the NO<sub>x</sub> trap composition is present in an amount from about 1 to 30% of

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the total weight of the NOx trap washcoat (e.g. See col. 8, lines 1-67; col. 12, lines 28-67; col. 13, lines 1-55).

Regarding claim 4, Pott further discloses that the oxide that inhibits the decrease in NOx storing ability of the NOx trap composition is present in an amount from about 5 to 20% of the total weight of the NOx trap washcoat (e.g. See col. 8, lines 1-67; col. 12, lines 28-67; col. 13, lines 1-55).

Regarding claim 5, Pott further discloses that the oxide that inhibits the decrease in NOx storing ability of the NOx trap composition is present in an amount from about 5 to 15% of the total weight of the NOx trap washcoat (e.g. See col. 8, lines 1-67; col. 12, lines 28-67; col. 13, lines 1-55).

Regarding claims 6, 14, Pott further discloses that the NOx absorber is selected from the group consisting of oxides of alkali metals, oxides of alkaline earth metals, oxides of rare earth metals, and combinations thereof (e.g. See col. 12, lines 65-67; col. 13, lines 1-55).

Regarding claims 7, 15, Pott further discloses that the NOx absorber is selected from the group consisting of cesium oxide, praseodymium oxide, strontium oxide, barium oxide, and combinations thereof (e.g. See col. 12, lines 65-67; col. 13, lines 1-55).

Regarding claims 8, 16, Pott further discloses that the precious metal is a metal selected from the group consisting of platinum, palladium, rhodium, and combinations thereof (e.g. See col. 12, lines 65-67; col. 13, lines 1-55).

Regarding claims 9, 18, Pott further discloses that the NOx trap composition is applied to a substrate (e.g. See col. 12, lines 65-67; col. 13, lines 1-55).

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Regarding claims 10, 19, Pott further discloses that the substrate is cordierite (e.g. See col. 12, lines 65-67; col. 13, lines 1-55).

Regarding claims 11, Pott further discloses that the NOx trap composition is applied to the substrate by washcoating (e.g. See col. 12, lines 65-67; col. 13, lines 1-55).

**Regarding claims 12 and 20, Pott further discloses that the vehicle exhaust system implementing the method of claims 1 and 13** (e.g. See col. 4, lines 53-67; col. 5, lines 1-3; col. 7, lines 1-65). *It is examiner official notice is taken that the claim is a Product-by Process claim. "Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process".*

#### ***Prior Art***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure and consists of five patents:

Deeba et al. (Pat. No. 6497848), Bouly et al. (Pat. No. 6852666), Dou et al. (Pat. No. 6391822), Li (Pat. No. 6419890), and Chen (Pat. No. 6923945) all discloses an exhaust gas purification for use with an internal combustion engine.



*Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Binh Tran whose telephone number is (571) 272-4865. The examiner can normally be reached on Monday-Friday from 8:00 a.m. to 4:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas E. Denion, can be reach on (571) 272-4859. The fax phone numbers for the organization where this application or proceeding is assigned are (571) 273-8300 for regular communications and for After Final communications.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

BT  
December 09, 2005



Binh Q. Tran  
Patent Examiner  
Art Unit 3748